

CM30174 + CM50206

Intelligent Agents

Marina De Vos, Julian Padget

Outline / version 0.4



October 5, 2010

Organisation

- Lecturers: Marina De Vos and Julian Padget
 - 10 × 2hr lectures, Tuesday: 15:15–17:05 6E2.2
 - 2 × revision classes, before + after Christmas
- Tutors: Gideon Bibu, Kewei Duan, Tristan Caulfield
 - 5 × 2hr labs, Wed: 11:15–13:05 2E1.14
 - 5 × 2hr (mandatory) tutorials, as above
 - **Week 3:** Protégé
 - **Week 4:** Game theory
 - **Week 5:** Agentscape
 - **Week 6:** JBoss rules
 - **Week 7:** Answer Set Programming

Assessment

- Undergraduate
 - 2 × coursework (50%). Note: plagiarism guidelines
 - Trading agent competition (pairs)
 - Virtual world exploration (individual)
 - Exam: 3 questions out of 4; assessing material from
 - Lectures + discussions
 - Directed reading
 - The textbook
- Masters
 - 3 × coursework (60%). Note: plagiarism guidelines
 - Trading agent competition (pairs)
 - Virtual world exploration (individual)
 - Seminar program: presentation and critical analysis of research papers
 - Exam: as above

Aims and Objectives

Aims:

- To introduce the principles of agents, agency, institutions and agent software development.

Objectives:

- To know the factors that differentiate agents from other software systems and be able to classify agents according to their competencies.
- To describe and to contrast different agent architectures, platforms and approaches to agent development.
- To develop simple agent-based software systems.
- To deploy tools for the construction of agent systems
- To construct a simple ontology
- To construct agents that communicate using an ontology
- To construct a simple reasoning agent to work with other

Content

- 1 Outline (MDV); Introduction to intelligent agents (JAP)
- 2 Reasoning Agents (MDV)
- 3 Communications and Ontologies (JAP)
- 4 Game theory (MDV)
- 5 Reaching Agreements (JAP)
- 6 Coalition Formation (JAP)
- 7 Logics for multiagent systems (MDV)
- 8 Institutions and norms (JAP)
- 9 Modelling Institutions (MDV)
- 10 Agent-based Simulation (JAP)

Supporting materials

- Wooldridge: An Introduction to Multi-Agent Systems (2nd Edition)
- Moodle
- Papers for directed reading (linked from Moodle)
- Software:
 - The Trading Agent Competition software
<http://www.sics.se/tac/>
 - The Protégé ontology editor (+ JADE bean generator)
<http://protege.stanford.edu/>
 - JBoss Rules
<http://www.jboss.com/products/rules>
 - The Agentscape platform
<http://www.agentscape.org>